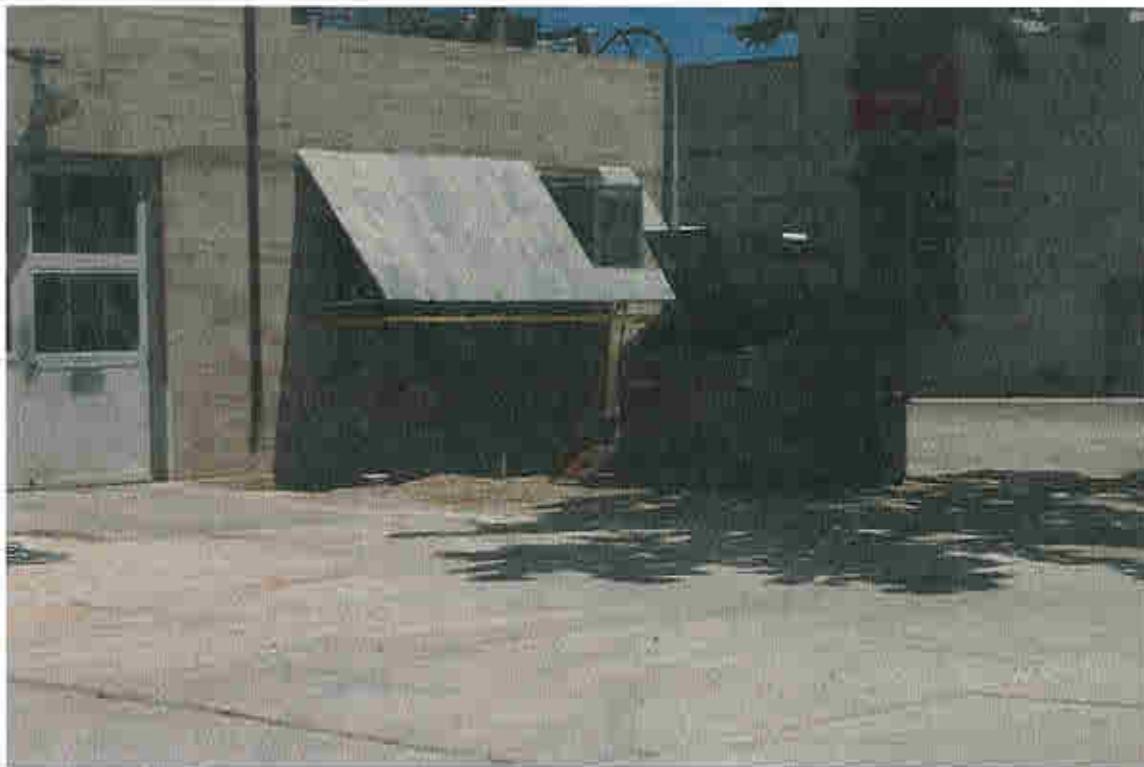


Decision Document

**Solid Waste Management Unit I-13
Building 10 Landfill/ Discharge
Hawthorne Army Depot
Hawthorne, Nevada**



Hawthorne Army
Depot



US Army Corps
of Engineers

September 1999

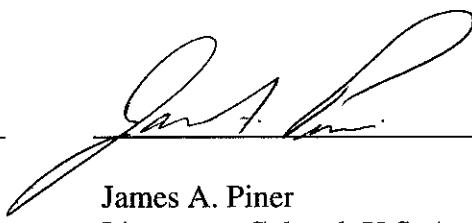
Decision Document SWMU I-13

September 1999

The selected remedy is protective of human health and the environment. It has been shown that a complete pathway to human health and the environment does not exist, and there is no potential for an exposure pathway to be completed in the future.

U. S. Army

21 OCT 1999



James A. Piner
Lieutenant Colonel, U.S. Army

State of Nevada

22 Nov 99


Paul Liebendorfer

Paul Liebendorfer
Chief, Bureau of Federal Facilities

Decision Document

**Solid Waste Management Unit I-13
Building 10 Landfill/ Discharge
Hawthorne Army Depot
Hawthorne, Nevada**



Hawthorne Army
Depot



US Army Corps
of Engineers

September 1999

Decision Document
SWMU I-13, Building 10 landfill/ Discharge
Hawthorne Army Depot
Hawthorne, Nevada

1.0 Introduction:

This decision document describes the rationale for the proposed closure of SWMU I-13, Building 10 landfill/ Discharge, at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. This document was prepared by the U.S. Army Corps of Engineers, Sacramento District, HWAD and the Nevada Department of Environmental Protection (NDEP).

Tetra Tech, Inc. (Tt), was tasked by the US Army Corps of Engineers, Sacramento District (USACE), to perform remedial investigations and ground water monitoring at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. These tasks were conducted from 1993 through 1997, primarily at solid waste management units (SWMUs) designated by the Army and the Nevada Division of Environmental Protection (NDEP). The NDEP is the lead regulatory agency for environmental issues at HWAD. The purpose of the monitoring was to determine the extent and degree of environmental impacts, if any, associated with activities performed at each SWMU. The primary goal of the investigation was to assess the environmental impacts and to report the findings, present conclusions, and recommend any remediation, if necessary.

With guidance from the NDEP, basewide proposed closure goals (PCGs) for soil were established as acceptable levels so that SWMU closure could be recommended and to assist in directing the investigative efforts toward those SWMUs where the target analytes were of greatest concern (Appendix B). These PCGs were used as action levels throughout this investigation and are used for comparison with the detected analytes in this report.

2.0 Site History

SWMU I13 is located within HWAD's industrial area, approximately 750 feet southwest of the intersection of US Highway 95 and Thorne Road, adjacent to Building 10 (Figure 1-1). A former sump was reportedly located about 12 feet southeast of the Building 10 sheet metal shop and adjacent to a concrete sidewalk and an asphalt driveway on the south side of Building 10 (Figure 1-2). The USACE, HWAD, and NDEP agreed to define the boundaries of each SWMU using annotated monuments and survey pins. As part of Tt's 1997 field investigation, a survey monument was constructed and surveyed at SWMU I13. A brass survey pin on the monument designates the monument number HWAAP-13-1996 and the SWMU number I13. Two corner pins were set and surveyed to define the SWMU boundary, with the monument as the west corner. The locations of

these corner markers and the SWMU boundary are shown on Figure 1-2. The survey data for SWMU I13 is presented in Appendix A.

3.0 Site Conditions

SWMU I13 was backfilled with native soil and was graded flat. Using the calculated ground water elevations from the basewide network of monitoring wells; the depth to the shallowest ground water at this SWMU is interpolated to be approximately 120 feet below the ground surface (bgs), with a projected ground water gradient direction estimated to be toward the north.

The location of the sump was identified by a protective grating about eight feet long and four feet wide constructed from three steel railroad rails. Otherwise the sump area would not be distinguishable from the surrounding ground surface. No evidence of a release of any of the target analytes was observed at the surface. Activities at the adjacent Building 10 included metal work, such as cutting and cleaning sheet metal and metal parts. These activities may have used cutting oils and cleaning solvents on the metal, and the liquid waste products may have been disposed of in the sump at SWMU I13. No evidence of contamination was visible on the surface of this SWMU. No investigation activities were conducted during these inspections, and no soil samples were collected from the SWMU at that time. Based on the reported activities at SWMU I13 and the adjacent Building 10, the target analytes for this investigation are metals, total petroleum hydrocarbons (TPH) as cutting or lubricating oil, volatile organic compounds (VOCs) as constituents of TPH products and solvents, and polychlorinated biphenyls (PCBs) as a constituent of cooling oils.

4.0 INVESTIGATIONS

Site inspections of SWMU I13 were conducted by Resource Application, Inc. (RAI) (RAI 1992) and Tt (Tt 1993). Petroleum hydrocarbon compounds and paint residue were reportedly disposed of in the sump (RAI 1992); however, during these inspections, the pit could not be inspected because it was filled with native soil. No investigation activities were conducted during these inspections, and no soil samples were collected from the SWMU at that time. Tt conducted a geophysical survey as a field screening activity, performed headspace screening for VOCs and TPH field screening on all subsurface soil samples, and collected subsurface soil samples during 1994 and 1997 remedial investigations to better define and characterize the extent of any contamination.

5.0 Investigation Results

The results of the subsurface soil samples collected from the soil borings at SWMU I13 and the analyses performed are shown in Appendix C. Figure 3-1 illustrates the boring locations. The locations of these borings were based on the results of the geophysical survey and the objective to assess if the sump had released any of the target analytes.

During Tt's 1994 and 1997 remedial investigations of SWMU I13, cadmium (<0.02 mg/kg to 2.1 mg/kg), total chromium (4.4 mg/kg to 21 mg/kg), and lead (<5 mg/kg to 52 mg/kg) were found in the subsurface soil samples at concentrations greater than their respective maximum expected background concentrations of 1.08 mg/kg, 13.76 mg/kg, and 16.7 mg/kg, respectively. Only soil sample I13-SB01-2-S contained total chromium (21 mg/kg) at a concentration slightly greater than total chromium's PCG of 20 mg/kg. All of the other metal concentrations found in these subsurface soil samples were less than their respective PCGs, indicating that no remediation of the subsurface soils would be necessary with regards to metals.

Although five VOCs and one PCB compound were found in the 13 subsurface soils collected from SWMU I13, none of the concentrations of these target analytes were greater than their respective PCGs, indicating that no remediation of the subsurface soils would be necessary with regards to VOCs or PCBs.

No concentrations of TPH were found in any of the 13 subsurface soil samples collected from SWMU I13.

6.0 Remediation

No remediation action was required for this site

7.0 Remediation Results

Not applicable

8.0 Public Involvement:

It is the U.S. Department of Defense and Army policy to involve the local community throughout the investigation process at an installation. To initiate this involvement, HWAD has established and maintains a repository library at the local public library. This repository includes final copies of all past studies and other documents regarding environmental issues at HWAD. As future environmental documents are made available to HWAD the repository shall be updated.

HWAD has solicited community participation in establishment of a restoration and advisory board (RAB). To date there has been insufficient response and HWAD has not formed a RAB. HWAD has held open houses to inform the public of on going environmental issues. HWAD continues to solicit community involvement, and will establish a RAB should sufficient community interest be obtained.

9.0 Conclusions and Recommendations

There is no evidence of any of the chemicals of concern at SWMU I13. SWMU I13 is recommended to the NDEP for site closure without land use restrictions.

10.0 REFERENCES

NDEP. October 1998. Letter to HWAD. Draft Remedial Investigation reports, Solid Waste Management Units I13, A08, H04, J12, and I03/04.

Resource Application, Inc. (RAI). 1992. Site Screening Inspection (SSI) for the Hawthorne Army Ammunition Plant, Hawthorne, NV. Prepared for the US Army Corps of Engineers Toxic and Hazardous Materials Agency by Resource Applications, Inc., Falls Church, Virginia, December 1992.

Tetra Tech, Inc. (Tt). 1993. Draft Technical Memorandum for Group B SWMUs, Hawthorne Army Ammunition Plant. November 22, 1993.

_____. 1994a. Hawthorne Army Ammunition Plant - Group B Remedial Investigation: Final Site Safety and Health Plan.

_____. 1994b. Hawthorne Army Ammunition Plant - Group B Remedial Investigation: Final Work Plan. Two volumes.

_____. 1994c. Hawthorne Army Ammunition Plant - Group B Remedial Investigation: Final Chemical Data Acquisition Plan.

_____. 1997a. Final Quarterly Ground Water Monitoring Report, First Quarter 1997, Hawthorne Army Depot, Hawthorne, Nevada. September 1997.

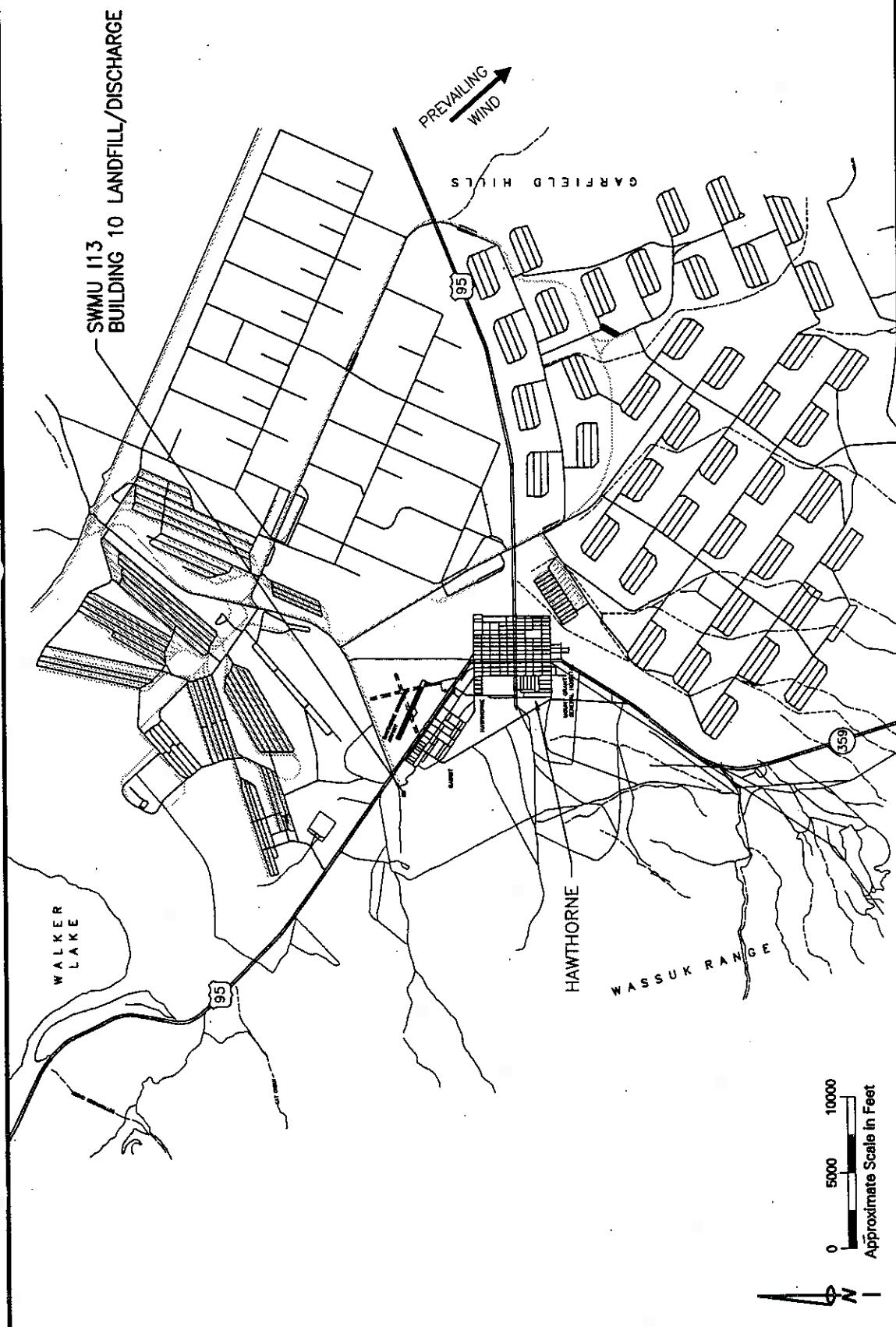
_____. 1997b. Quarterly Ground Water Monitoring Report, Second Quarter 1997, Hawthorne Army Depot, Hawthorne, Nevada. July 1997.

_____. 1997c. Final Site Health and Safety Plan, Hawthorne Army Depot, Hawthorne, Nevada. February 1997.

_____. 1997d. Final Data Package with recommendations for future action, Group B solid waste management units, Hawthorne Army Depot, Hawthorne, Nevada, Volumes 1, 2a, and 2b. January 1997.

_____. 1997e. Final Sampling and Analysis Plan, Remedial Investigations, Groups A and B Solid Waste Management Units, Hawthorne Army Depot, Hawthorne, Nevada. February 1997.

_____. 1997f. Final Technical Memorandum Background Sampling at the Hawthorne Army Depot, Hawthorne, Nevada. March 1997. 1993. Draft Technical Memorandum for Group B SWMUs, Hawthorne Army Ammunition Plant. November 22, 1993.



SOURCE: TETRA TECH FINAL DATA PACKAGE, 1996 (REV. 1997)

Site Location Map
SWMU 113
Building 10 Landfill/Discharge
Hawthorne Army Depot
Hawthorne, Nevada
Figure 1-1



Legend:



- Boundary Corner Pin
- Railroad
- SWMU Monument

**Site Map
SWMU I13**

Building 10 Landfill/ Discharge

Hawthorne Army Depot
Hawthorne, Nevada

Figure 1-2



0 15 30
Approximate Scale in feet



Legend:

- △ SWMU Monument
- Boundary Corner Pin
- Soil Boring Location
- Railroad
- ◊ SGPR Anomaly
- SGPR Traverse



0 15 30
Approximate Scale in feet

Investigation Activity Map

SWMU 11

Building 10 Landfill/ Discharge

Hawthorne Army Depot

Hawthorne, Nevada

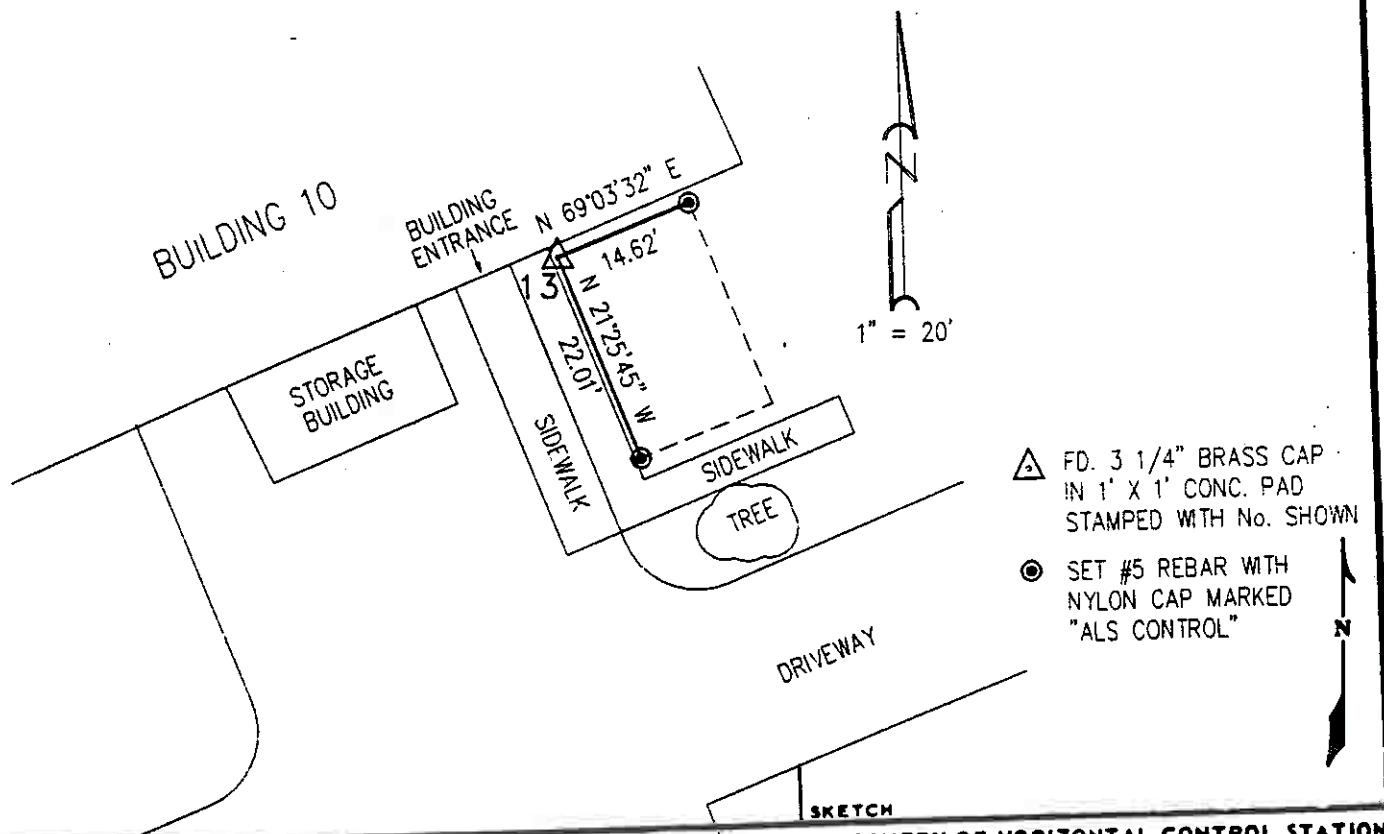
Figure 3-1

Appendix A

| | | | | |
|---|--|--|--|--|
| COUNTRY USA | TYPE OF MARK BRASS CAP | STATION 13 | STATION COG HW/AAP | ELEVATION 4160.50 (FT) (M) |
| LOCALITY HAWTHORNE NEV | STAMPING ON MARK 13 I-13 | DATUM NAD '27 | DATUM NGVD '29 | ESTABLISHED BY (AGENCY) A.L.S. |
| LATITUDE 38°32'46.65751" N (NORTHING)(EASTING) 1381982.61 (NORTHING)(EASTING) | LONGITUDE 118°39'06.36723" W (EASTING)(NORTHING) 480428.07 (EASTING)(NORTHING) | GRID AND ZONE NEVADA SP WEST | GRID AND ZONE NEVADA SP WEST | DATE 1997 ORDER 2 ND |
| TO OBTAIN GRID AZIMUTH, ADD TO OBTAIN GRID AZ. (ADD)(SUB.) | | | | TO THE GEODEMIC AZIMUTH TO THE GEODEMIC AZIMUTH |
| OBJECT | AZIMUTH OR DIRECTION (GEODEMIC)(GRID) (MAGNETIC) | BACK AZIMUTH | GEOD. DISTANCE (METERS) | GRID DISTANCE (METERS) |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

MONUMENT 13 - SWMU I-13

MONUMENT IS AT THE SOUTHWEST CORNER OF BUILDING 10. SEE MAP BELOW. MONUMENT IS A 3 1/4" BRASS CAP SET IN A 1' X 1' CONCRETE PAD AND IS MARKED WITH A 4" X 4" X 6' WOOD POST, PAINTED WHITE.



DA FORM 1959 OCT 64

REPLACES DA FORMS 1959
AND 1960, 1 FEB 57, WHICH
ARE OBSOLETE.

DESCRIPTION OR RECOVERY OF HORIZONTAL CONTROL STATION
For use of this form, see TM 5-237; the proponent
agency is TRADOC.

SWMU I08 Survey Data
Hawthorne Army Depot
Hawthorne, Nevada

| SWMU | Point ID | Northing (feet) | Easting (feet) | Elevation |
|------|---------------|--------------------|-------------------|-----------|
| I08 | HWAAP-13-1996 | 1381982.60 | 480428.09 | 4160.50 |
| I08 | Pin 1 | 1381987.83 | 480441.74 | NE |
| I08 | Pin 2 | 1381962.12 | 480436.13 | NE |
| I08 | SB01 | 1381969.22 | 480435.81 | NE |
| I08 | SB02 | 1381983.51 | 480446.10 | NE |

Appendix B

Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada

| Constituent of Concern | Chemical Classification | Carcinogenic (C) or Non-Carcinogenic (NC) | HWAD Proposed Closure Goals for Soil (mg/kg) | HWAD Proposed Closure Goal Source |
|--|-------------------------|---|--|-----------------------------------|
| Nitrate | Anion | NC | 128,000 | Calculated Subpart S ^a |
| 2-Amino-dinitrotoluene | Explosive | NC | - | NA ^b |
| 4-Amino-dinitrotoluene | Explosive | NC | - | NA |
| 1,3-Dinitrobenzene | Explosive | NC | 8 | Calculated Subpart S |
| 2,4-Dinitrotoluene | Explosive | NC | 160 | Calculated Subpart S |
| 2,6-Dinitrotoluene | Explosive | NC | 80 | Calculated Subpart S |
| HMX | Explosive | NC | 4,000 | Calculated Subpart S |
| Nitrobenzene | Explosive | NC | 40 | Calculated Subpart S |
| Nitrotoluene (2-, 3-, 4-) | Explosive | NC | 800 | Calculated Subpart S |
| RDX | Explosive | NC | 64 | Calculated Subpart S |
| Tetryl | Explosive | NC | 800 | Calculated Subpart S |
| 1,3,5-Trinitrobenzene | Explosive | NC | 4 | Calculated Subpart S |
| 2,4,6-Trinitrotoluene | Explosive | C | 233 | Calculated Subpart S |
| Aluminum | Metal | NC | 80,000 | Calculated Subpart S |
| Arsenic (cancer endpoint) | Metal | C & NC | 30 | Background ^c |
| Barium and compounds | Metal | NC | 5,600 | Calculated Subpart S |
| Beryllium and compounds | Metal | C | 1 | Background |
| Cadmium and compounds | Metal | NC | 40 | Calculated Subpart S |
| Chromium III and compounds | Metal | NC | 80,000 | Calculated Subpart S |
| Lead | Metal | NC | 1000 | PRG ^d |
| Mercury and compounds (inorganic) | Metal | NC | 24 | Calculated Subpart S |
| Selenium | Metal | NC | 400 | Calculated Subpart S |
| Silver and compounds | Metal | NC | 400 | Calculated Subpart S |
| Acenaphthene | PAH | NC | 4,800 | Calculated Subpart S |
| Benzo[a]anthracene | PAH | C | 0.96 | Calculated Subpart S |
| Benzo[a]pyrene | PAH | C | 0.10 | Detection Limit ^e |
| Benzo[b]fluoranthene | PAH | C | 0.96 | Calculated Subpart S |
| Benzo[k]fluoranthene | PAH | C | 10 | Calculated Subpart S |
| Chrysene | PAH | C | 96 | Calculated Subpart S |
| Dibenz[ah]anthracene | PAH | C | 0.96 | Calculated Subpart S |
| Fluoranthene | PAH | NC | 3,200 | Calculated Subpart S |
| Fluorene | PAH | NC | 3,200 | Calculated Subpart S |
| Indeno[1,2,3-cd]pyrene | PAH | C | - | NA |
| Naphthalene | PAH | NC | 3,200 | Calculated Subpart S |
| Pyrene | PAH | NC | 2,400 | Calculated Subpart S |
| Total Petroleum Hydrocarbons as Diesel (TPH-d) | PAH | C | 100 | NDEP Level Clean-up ^f |
| Polychlorinated biphenyls (PCBs) | PCBs | C | 25 | TSCA ^g |
| Bis(2-ethylhexyl)phthalate (DEHP) | SVOC | C | 1,600 | Calculated Subpart S |
| Bromoform (tribromomethane) | SVOC | C | 89 | Calculated Subpart S |

Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada

| Constituent of Concern | Chemical Classification | Carcinogenic (C) or Non-carcinogenic (NC) | HWAD Proposed Closure Goals for Soil (mg/kg) | HWAD Proposed Closure Goal Source |
|-----------------------------|-------------------------|---|--|-----------------------------------|
| Butyl benzyl phthalate | SVOC | NC | 16,000 | Calculated Subpart S |
| Dibromochloromethane | SVOC | C | 83 | Calculated Subpart S |
| Dibutyl-phthalate | SVOC | NC | 8,000 | Calculated Subpart S |
| Diethyl phthalate | SVOC | NC | 64,000 | Calculated Subpart S |
| Phenanthrene | SVOC | - | - | NA |
| Phenol | SVOC | NC | 48,000 | Calculated Subpart S |
| Acetone | VOC | NC | 800 | Calculated Subpart S |
| Anthracene | VOC | NC | 24,000 | Calculated Subpart S |
| Benzene | VOC | C | 24 | Calculated Subpart S |
| Bis(2-chloroisopropyl)ether | VOC | C | 3,200 | Calculated Subpart S |
| Bromomethane | VOC | NC | 112 | Calculated Subpart S |
| Carbon tetrachloride | VOC | C | 5 | Calculated Subpart S |
| Chlorobenzene | VOC | NC | 1,600 | Calculated Subpart S |
| Chloroform | VOC | C | 115 | Calculated Subpart S |
| Chloromethane | VOC | C | 538 | Calculated Subpart S |
| Dibromomethane | VOC | C | 0.008 | Calculated Subpart S |
| 1,2-Dichlorobenzene | VOC | NC | 7,200 | Calculated Subpart S |
| 1,4-Dichlorobenzene | VOC | C | 18,300 | Calculated Subpart S |
| Dichlorodifluoromethane | VOC | C | 16,000 | Calculated Subpart S |
| Ethylbenzene | VOC | NC | 8,000 | Calculated Subpart S |
| Methylene bromide | VOC | NC | 800 | Calculated Subpart S |
| Methylene chloride | VOC | C | 4,800 | Calculated Subpart S |
| 2-Methylnaphthalene | VOC | - | - | NA |
| 1,1,2,2-Tetrachloroethane | VOC | C | 35 | Calculated Subpart S |
| Tetrachloroethylene (PCE) | VOC | C & NC | 800 | Calculated Subpart S |
| Toluene | VOC | NC | 16,000 | Calculated Subpart S |
| 1,1,1-Trichloroethane | VOC | NC | 7,200 | Calculated Subpart S |
| Trichloroethylene (TCE) | VOC | C & NC | 480 | Calculated Subpart S |
| Trichlorofluoromethane | VOC | NC | 24,000 | Calculated Subpart S |
| 1,2,3-Trichloropropane | VOC | C | 480 | Calculated Subpart S |
| Vinyl chloride | VOC | C | 0.37 | Calculated Subpart S |
| Xylene Total (m-, o-, p-) | VOC | NC | 160,000 | Calculated Subpart S |
| 2,3,7,8-TCDD | Dioxin | C | 0.000005 | Calculated Subpart S |

* RCRA 55 FR 30870

^b Not available

^c Highest background concentration detected in 50 background soil samples

^d Smucker, Stanford J. USEPA Region IX, Preliminary Remedial Goals, Second Half, Sep. 1995

^e Method detection limit for Volatile Organic Compounds by EPA Method 8260 or

^f Semi-Volatile Organic Compounds analyzed by EPA Method 8270

^g Nevada Division of Environmental Protection

^h Cleanup level for PCB spills in accordance with Toxic Substance and Control Act Spill Policy Guidelines 40 CFR 761

Appendix C

Metals
Method 510 C (BCA)

| Sample ID | Location ID | Date | Depth (feet) | La^{65} | Aluminum | | Arsenicic | | Barium | | Cadmium | | Selenium | | Silver | | Chromium | | Lead | |
|--------------|-------------|--------|-----------------|-------------------------|----------|-------|-----------|-------|--------|-------|---------|-------|----------|-------|--------|-------|----------|-------|-------|--|
| | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | |
| I13-DP182 | SB01 | 8/7/94 | 14 | BCA | NA | <4 | 42 | 0.96 | <5 | <0.9 | 4.7 | <5 | 4.7 | J | 4.7 | J | 4.7 | J | | |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | NA | <4 | 65 | 1.5 | <5 | <0.9 | 5.8 | 5.8 | 5.8 | 5.6 | J | 5.8 | J | 5.6 | J | |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | NA | <4 | 51 | 2.1 | <5 | <0.9 | 21 | 21 | 21 | 52 | J | 21 | J | 52 | J | |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | NA | <4 | 44 | 1.1 | <5 | <0.9 | 8.1 | 8.1 | 8.1 | 6.2 | J | 8.1 | J | 6.2 | J | |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | NA | <4 | 86 | 1.1 | <5 | <1 | 5.9 | 5.9 | 5.9 | <5 | J | 5.9 | J | <5 | J | |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | NA | <4 | 46 | 1.4 | <6 | <1 | 4.4 | 4.4 | 4.4 | <6 | J | 4.4 | J | <6 | J | |
| | | | | | 0 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | |
| | | | | | 0 | 0 | 6 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | | 0 | 0 | 42 | 0.96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | | 0 | 0 | 86 | 2.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | | 80000 | 100 | 2000 | 20 | 20 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | | 12365 | 18.1 | 447 | 1.08 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

Notes:
NA = Not analyzed.

Method 6010A (APCL)

| Sample ID | Location ID | Date | Depth (feet) | Lab | Sample | Aluminum, Total | Arsenic, Total | Boron, Total | Chromium, Total | Cadmium, Total | Lead, Total | Nickel, Total | Selenium, Total | Silver, Total |
|----------------------------------|-------------|---------|--------------|------|--------|-----------------|----------------|--------------|-----------------|----------------|-------------|---------------|-----------------|---------------|
| | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| I13-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | 7040 | 2.1 | 74.1 | <0.018 | <0.021 | NA | 4.3 | NA | <0.19 | <0.071 |
| I13-SB02-2-S | SB02 | 2/16/97 | 25.5 | APCL | 3970 | 1.1 | 35.8 | <0.017 | <0.02 | NA | 2.7 | NA | <0.18 | <0.071 |
| I13-SB02-3-S | SB02 | 2/16/97 | 34 | APCL | 5190 | 1.5 | 72.1 | <0.018 | <0.021 | NA | 3.8 | NA | <0.19 | <0.072 |
| I13-SB02-4-S | SB02 | 2/17/97 | 45.5 | APCL | 2530 | 1.7 | 58.9 | <0.018 | <0.021 | NA | 1.6 | NA | <0.19 | <0.071 |
| I13-SB02-5-S | SB02 | 2/17/97 | 49.5 | APCL | 6630 | 8.9 | 135 | <0.02 | <0.024 | NA | 6.7 | NA | <0.22 | <0.083 |
| Analyses | | | | | | | | | | | | | | |
| Detections | | | | | 5 | 5 | 5 | 5 | 5 | 0 | 5 | 0 | 5 | 5 |
| Minimum Concentration | | | | | 5 | 5 | 5 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Maximum Concentration | | | | | 2530 | 1.1 | 35.8 | 0 | 0 | 0 | 1.6 | 0 | 0 | 0 |
| HWAD - PCG | | | | | 7040 | 8.9 | 135 | 0 | 0 | 0 | 6.7 | 0 | 0 | 0 |
| HWAD - PCG Hits | | | | | 80000 | 100 | 2000 | 1 | 20 | 20 | 100 | NE | 20 | 100 |
| Maximum Background Concentration | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NE | 0 | 0 |
| Background Hits | | | | | 12365 | 18.1 | 447 | 0.58 | 1.08 | 13.76 | 16.7 | 0 | 0 | 0 |
| Notes: | | | | | | | | | | | | | | |
| NA = Not analyzed. | | | | | | | | | | | | | | |
| NE = Not established. | | | | | | | | | | | | | | |

Mercury
Method 7471 (BCA)

| Sample ID | Location ID | Date | Sample Depth. (feet) | Lab | Mercury mg/kg |
|----------------------------------|-------------|--------|-------------------------|-----|------------------|
| I13-DP182 | SB01 | 8/7/94 | 14 | BCA | <0.04 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.04 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | 0.071 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.04 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | <0.04 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.04 |
| <hr/> | | | | | |
| Analyses | | | | | 6 |
| Detections | | | | | 1 |
| Minimum Concentration | | | | | 0.071 |
| Maximum Concentration | | | | | 0.071 |
| <hr/> | | | | | |
| HWAD - PCG | | | | | 24 |
| HWAD - PCG Hits | | | | | 0 |
| <hr/> | | | | | |
| Maximum Background Concentration | | | | | 0.108 |
| Background Hits | | | | | 0 |

Mercury
Method 7471A (APCL)

| Sample ID | Location ID | Date | Depth (feet) | Lab | Mercury, Total |
|----------------------------------|-------------|---------|--------------|------|----------------|
| mg/kg | | | | | |
| I13-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | <0.07 |
| I13-SB02-2-S | SB02 | 2/16/97 | 25.5 | APCL | <0.07 |
| I13-SB02-3-S | SB02 | 2/16/97 | 34 | APCL | <0.071 |
| I13-SB02-4-S | SB02 | 2/17/97 | 45.5 | APCL | <0.07 |
| I13-SB02-5-S | SB02 | 2/17/97 | 49.5 | APCL | <0.082 |
| <hr/> | | | | | |
| Analyses | | | | | 5 |
| Detections | | | | | 0 |
| Minimum Concentration | | | | | 0 |
| Maximum Concentration | | | | | 0 |
| <hr/> | | | | | |
| HWAD - PCG | | | | | 24 |
| HWAD - PCG Hits | | | | | 0 |
| <hr/> | | | | | |
| Maximum Background Concentration | | | | | 0.108 |
| Background Hits | | | | | 0 |

TPH
Method 8015M (BCA)

| Sample ID | Location ID | Date | Depth (feet) | Lab | TPH (as diesel) mg/kg |
|-----------------------|-------------|--------|--------------|-----|--------------------------|
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <10 UJ |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <10 UJ |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <10 UJ |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <11 UJ |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | <11 UJ |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <10 UJ |
| <hr/> | | | | | |
| Analyses | | | | | 6 |
| Detections | | | | | 0 |
| Minimum Concentration | | | | | 0 |
| Maximum Concentration | | | | | 0 |
| <hr/> | | | | | |
| HWAD - PCG | | | | | 100 |
| HWAD - PCG Hits | | | | | 0 |

TPH
Method 8015ME (APCL)

| Sample ID | Location ID | Date | Depth (feet) | Lab | C11-C22 (Diesel) | C23-C30 (Motor oil) | C31-C40 (Heavy oil) | C8-C10 (Gasoline) | Diesel Fuel |
|-----------------------|-------------|---------|-----------------|------|------------------|---------------------|---------------------|-------------------|-------------|
| | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| I13-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | <0.84 | <0.38 | <0.29 | <0.16 | NA |
| Analyses | | | | | 1 | 1 | 1 | 1 | 0 |
| Detections | | | | | 0 | 0 | 0 | 0 | 0 |
| Minimum Concentration | | | | | 0 | 0 | 0 | 0 | 0 |
| Maximum Concentration | | | | | 0 | 0 | 0 | 0 | 0 |
| HWAD - PCG | | | | | 100 | 100 | 100 | 100 | 100 |
| HWAD - PCG Hits | | | | | 0 | 0 | 0 | 0 | 0 |

Notes:

NE = Not established.

OC Pesticides and PCBs
Method 8080 (BCA)

| Sample ID | Location ID | Depth (feet) | Lab | Aroclor 1016 | | Aroclor 1222 | | Aroclor 1232 | | Aroclor 1242 | | Aroclor 1248 | | Aroclor 1254 | | Aroclor 1260 | | Total PCBs | |
|--------------|-------------|-----------------|------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|--------|--------------|--------|------------|-------|
| | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.03 | m- | <0.02 | m- | <0.03 | m- | <0.02 | m- | <0.02 | m- | <0.007 | m- | <0.007 | NA | |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.03 | m- | <0.02 | m- | <0.03 | m- | <0.02 | m- | <0.02 | m- | <0.007 | m- | <0.007 | NA | |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.03 | m- | <0.03 | m- | <0.03 | m- | <0.02 | m- | <0.02 | m- | 0.062 | m- | 0.062 | NA | |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.03 | m- | <0.03 | m- | <0.02 | m- | <0.03 | m- | <0.02 | m- | <0.008 | m- | <0.008 | NA | |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | <0.03 | m- | <0.03 | m- | <0.02 | m- | <0.03 | m- | <0.02 | m- | <0.008 | m- | <0.008 | NA | |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.03 | m- | <0.03 | m- | <0.02 | m- | <0.03 | m- | <0.02 | m- | <0.007 | m- | <0.007 | NA | |
| | | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 0 |
| | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.062 | 0 | 0.062 | |
| | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.062 | 0 | 0.062 | |
| | | | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | NE |
| | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NE |

Notes:

NA = Not analyzed.

NE = Not established.

OC Pesticides and PCBs
Method 8081 (APCL)

| Sample ID | Location ID | Sample Date | Depth (feet) | Lab | 4,4-DDD | 4,4-DDE | 4,4-DDT | Aldrin | Alpha-BHC | AROCI0r-1016 | AROCI0r-1221 | AROCI0r-1232 | AROCI0r-1242 | AROCI0r-1248 | AROCI0r-1254 | AROCI0r-1260 | Beta-BHC | Chlordane |
|--------------|-------------|-------------|--------------|------|---------|---------|---------|--------|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------|-----------|
| | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| 113-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | NA | NA | NA | NA | <0.0028 | <0.0035 | <0.0065 | <0.0077 | <0.0059 | <0.0041 | <0.0072 | NA | NA | |

Notes:
 NA = Not analyzed.
 NE = Not established.

OC Pesticides and PCBs
Method 8081 (APCL)

| Sample ID | Location ID | Depth (feet) | Lab | delta-BHC | | | | Heptachlor | | | | Heptachlor epoxide | | | | Methoxychlor | | | |
|-----------------------|-------------|--------------|-----------|-----------|-------|-------|-------|------------|-------|-------|-------|--------------------|-------|-------|-------|--------------|-------|-------|-------|
| | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| I13-SB02-1S | SB02 | 2/16/97 | 10.5 APCL | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Analyses | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detections | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Minimum Concentration | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Maximum Concentration | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| HWAD - PCG | | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| HWAD - PCG Hits | | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |

Notes:

NA = Not analyzed.

NE = Not established.

Meth. 260 (BCA)
SCCs

| Sample ID | Location ID | Sample Date (feet) | Lab | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
|---------------------------|-------------|-----------------------|----------|---------|-------|---------|-------|---------|-------|---------|-------|
| I13-DP183 | SB01 | 8/7/94 | 14 BCA | <0.0004 | m- | <0.0004 | m- | <0.0002 | m- | <0.0002 | m- |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 BCA | <0.0004 | m- | <0.0006 | m- | <0.0002 | m- | <0.0002 | m- |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 BCA | <0.0004 | m- | <0.0006 | m- | <0.0002 | m- | <0.0002 | m- |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 BCA | <0.0004 | m- | <0.0006 | m- | <0.0004 | m- | <0.0002 | m- |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 BCA | <0.0004 | m- | <0.0006 | m- | <0.0002 | m- | <0.0002 | m- |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 BCA | <0.0004 | m- | <0.0006 | m- | <0.0002 | m- | <0.0002 | m- |
| 1,1,1,2-Tetrachloroethane | | | | | | | | | | | |
| 1,1,1,1-Tetrachloroethane | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | |
| 1,1,2,3-Trichloropropane | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | |
| 1,1-Dichloroethylene | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloropropene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 1,2-Dichloroethene | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |

VOCs
Method 8260 (BCA)

| Sample ID | Location ID | Sample Date (feet) Lab | Depth | | mg/kg | |
|------------------------------|-------------|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | | | mg/kg |
| I13-DP183 | SB01 | 8/7/94 14 BCA | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. |
| I13-SB01-1-S | SB01 | 8/7/94 6 BCA | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. |
| I13-SB01-2-S | SB01 | 8/7/94 14 BCA | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. |
| I13-SB01-3-S | SB01 | 8/7/94 20.5 BCA | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. |
| I13-SB01-4-S | SB01 | 8/7/94 43.5 BCA | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. |
| I13-SB01-5-S | SB01 | 8/7/94 58.5 BCA | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0006 u. | <0.0002 u. | <0.0004 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. | <0.0002 u. |
| Notes: | | | | | | | | | | | | | | |
| NE = Not established. | | | | | | | | | | | | | | |
| Analyses | | | | | | | | | | | | | | |
| Deletions | | | | | | | | | | | | | | |
| Minimum Concentration | | | | | | | | | | | | | | |
| Maximum Concentration | | | | | | | | | | | | | | |
| HWAD - PCG | | | | | | | | | | | | | | |
| HWAD - PCG Hits | | | | | | | | | | | | | | |

Notes:
NE = Not established.

| Sample ID | Location ID | Sample Date (feet) | Lab | Chloroethane | | | | | |
|--------------------------------|-------------|--------------------|------|--------------|---------|-------|---------|-------|---------|
| | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| Chlorobenzene | | | | | | | | | |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | 0.0004 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| Chloroform | | | | | | | | | |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | 0.0004 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| Chloromethane | | | | | | | | | |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | 0.0004 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| Ethylenes | | | | | | | | | |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | 0.0004 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| Dibromochloromethane | | | | | | | | | |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | 0.0004 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| Dichlorodifluoromethane | | | | | | | | | |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | 0.0004 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |
| Methylene chloride | | | | | | | | | |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA | <0.0002 | u. | <0.0006 | u. | <0.0006 |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA | 0.0004 | u. | <0.0002 | u. | <0.0002 |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA | <0.0002 | u. | <0.0002 | u. | <0.0002 |

Notes:
NE = Not established.

VOCs
Method 8260 (BCA)

| Sample ID | Location ID | Date | Depth (feet) ^a | Toluene | | | | | |
|-----------------------|-------------|--------|---------------------------------|---------------------|------------------------|----------------------------|---------------------------|-------------------|----------------|
| | | | | Tetrachloroethylene | Total Xylylene Isomers | trans-1,2-Dichloroethylene | trans-1,3-Dichloropropene | Trichloroethylene | Vinyl chloride |
| I13-DP183 | SB01 | 8/7/94 | 14 | BCA <0.0006 ug | <0.0004 ug | <0.0006 ug | <0.0002 ug | <0.001 ug | <0.0002 ug |
| I13-SB01-1-S | SB01 | 8/7/94 | 6 | BCA <0.0006 ug | <0.0004 ug | <0.0006 ug | <0.0002 ug | <0.001 ug | <0.0002 ug |
| I13-SB01-2-S | SB01 | 8/7/94 | 14 | BCA <0.0006 ug | 0.0027 ug | 0.0018 ug | <0.0002 ug | <0.001 ug | <0.0002 ug |
| I13-SB01-3-S | SB01 | 8/7/94 | 20.5 | BCA <0.0006 ug | <0.0004 ug | <0.0006 ug | <0.0002 ug | <0.001 ug | <0.0002 ug |
| I13-SB01-4-S | SB01 | 8/7/94 | 43.5 | BCA <0.0006 ug | 0.0006 ug | <0.0006 ug | <0.0002 ug | <0.001 ug | <0.0002 ug |
| I13-SB01-5-S | SB01 | 8/7/94 | 58.5 | BCA <0.0006 ug | <0.0004 ug | <0.0006 ug | <0.0002 ug | <0.001 ug | <0.0002 ug |
| | | | | 6 | 6 | 6 | 6 | 6 | 6 |
| Analyses | | | | 0 | 2 | 1 | 0 | 0 | 5 |
| Detections | | | | 0 | 0.0006 | 0.0018 | 0 | 0 | 0 |
| Minimum Concentration | | | | 0 | 0.0027 | 0.0018 | 0 | 0 | 0 |
| Maximum Concentration | | | | 15 | 16000 | 160000 | NE | 10 | 24000 |
| HWD - PCG | | | | 0 | 0 | 0 | NE | 0 | 0 |
| HWD - PCG Hits | | | | | | | NE | 0 | 0 |

Notes:

NE = Not established.

Method 30A (APCL)

ICs

| Sample ID | Location ID | Sample Date | Depth (feet) | Lab | mg/kg |
|-----------------------|-------------|-------------|--------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| I13-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0002 | <0.0001 | <0.0004 | <0.0002 | <0.0005 |
| I13-SB02-2-S | SB02 | 2/16/97 | 25.5 | APCL | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0002 | <0.0001 | <0.0004 | <0.0002 | <0.0005 |
| I13-SB02-3-S | SB02 | 2/16/97 | 34 | APCL | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0002 | <0.0001 | <0.0004 | <0.0002 | <0.0005 |
| I13-SB02-4-S | SB02 | 2/17/97 | 45.5 | APCL | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0002 | <0.0001 | <0.0004 | <0.0002 | <0.0005 |
| I13-SB02-5-S | SB02 | 2/17/97 | 49.5 | APCL | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0002 | <0.0001 | <0.0005 | <0.0002 | <0.0006 |
| | | | | | | | | | | | | | |
| Analyses | | | | | | | | | | | | | |
| Detections | | | | | | | | | | | | | |
| Minimum Concentration | | | | | | | | | | | | | |
| Maximum Concentration | | | | | | | | | | | | | |
| HWAD - PCG | | | | | | | | | | | | | |
| HWAD - PCG Hits | | | | | | | | | | | | | |
| Notes: | | | | | | | | | | | | | |
| NE = Not established. | | | | | | | | | | | | | |

Method 8260A (APCL)

| Sample ID | Location ID | Sample Date | Depth (feet) | Lab | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | Benzene |
|------------------------------|-------------|-------------|--------------|------|---------|---------|---------|---------|---------|---------|---------|
| I13-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | <0.0001 | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0002 | <0.0002 |
| I13-SB02-2-S | SB02 | 2/16/97 | 25.5 | APCL | <0.0001 | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0002 | <0.0002 |
| I13-SB02-3-S | SB02 | 2/16/97 | 34 | APCL | <0.0001 | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0002 | <0.0002 |
| I13-SB02-4-S | SB02 | 2/17/97 | 45.5 | APCL | <0.0001 | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0002 | <0.0002 |
| I13-SB02-5-S | SB02 | 2/17/97 | 49.5 | APCL | <0.0001 | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0002 | <0.0002 |
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| Analyses | | | | | | | | | | | |
| Detections | | | | | | | | | | | |
| Minimum Concentration | | | | | | | | | | | |
| Maximum Concentration | | | | | | | | | | | |
| HWAD - PCG | | | | | | | | | | | |
| HWAD - PCG Hits | | | | | | | | | | | |
| | | | | | 7200 | NE | NE | NE | 150 | NE | NE |
| | | | | | 0 | NE | NE | NE | 0 | NE | NE |

Notes:

NE = Not established.

| Sample ID | Location ID | Date | Depth (feet) | Lg | Bromobenzene | | | | | | Chlorobenzene | | | | | |
|-------------|-------------|---------|--------------|------|--------------|---------|---------|---------|---------|---------|---------------|---------|---------|---------|---------|-------|
| | | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| 13-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | <0.0001 | <0.0002 | <0.0003 | <0.0001 | <0.0002 | <0.0007 | <0.0002 | <0.0003 | <0.0002 | <0.0001 | <0.0001 | |
| 13-SB02-2-S | SB02 | 2/16/97 | 25.5 | APCL | <0.0001 | <0.0002 | <0.0003 | <0.0001 | <0.0002 | <0.0007 | <0.0002 | <0.0003 | <0.0002 | <0.0001 | <0.0001 | |
| 13-SB02-3-S | SB02 | 2/16/97 | 34 | APCL | <0.0001 | <0.0002 | <0.0003 | <0.0001 | <0.0002 | <0.0007 | <0.0002 | <0.0003 | <0.0002 | <0.0001 | <0.0001 | |
| 13-SB02-4-S | SB02 | 2/17/97 | 45.5 | APCL | <0.0001 | <0.0002 | <0.0003 | <0.0001 | <0.0002 | <0.0007 | <0.0002 | <0.0003 | <0.0002 | <0.0001 | <0.0001 | |
| 13-SB02-5-S | SB02 | 2/17/97 | 49.5 | APCL | <0.0001 | <0.0002 | <0.0004 | <0.0001 | <0.0002 | <0.0008 | <0.0002 | <0.0004 | <0.0002 | <0.0001 | <0.0002 | |
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VOCs
Method 8260A (APCL)

| Sample ID | Location ID | Date | Depth (feet) | Lab | Dibromochloromethane | Ethylbenzene | Hexachlorobutadiene | Isopropylbenzene | m- <i>p</i> -Xylenes | Methylene chloride | n-Butylbenzene | n-Propylbenzene |
|-----------------------|-------------|---------|--------------|-------|----------------------|--------------|---------------------|------------------|----------------------|--------------------|----------------|-----------------|
| | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| 113-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | <0.0002 | <0.0005 | <0.0001 | <0.0002 | <0.0002 | <0.0007 | <0.0002 | <0.0001 |
| 113-SB02-2-S | SB02 | 2/16/97 | 25.5 | APCL | <0.0002 | <0.0005 | <0.0001 | <0.0002 | <0.0002 | <0.0007 | <0.0002 | <0.0001 |
| 113-SB02-3-S | SB02 | 2/16/97 | 34 | APCL | <0.0002 | <0.0005 | <0.0001 | <0.0002 | <0.0002 | <0.0005 | <0.0002 | <0.0001 |
| 113-SB02-4-S | SB02 | 2/17/97 | 45.5 | APCL | <0.0002 | <0.0005 | <0.0001 | <0.0002 | <0.0002 | <0.0005 | <0.0002 | <0.0001 |
| 113-SB02-5-S | SB02 | 2/17/97 | 49.5 | APCL | <0.0001 | <0.0006 | <0.0001 | <0.0002 | <0.0002 | <0.0006 | <0.0002 | <0.0001 |
| Analyses | | | | | | | | | | | | |
| Detections | | | | | | | | | | | | |
| Minimum Concentration | | | | | | | | | | | | |
| Maximum Concentration | | | | | | | | | | | | |
| HWAD - PCG | | | | | | | | | | | | |
| HWAD - PCG Hits | | | | | | | | | | | | |
| Notes: | | | | | | | | | | | | |
| NE = Not established. | | | | | | | | | | | | |

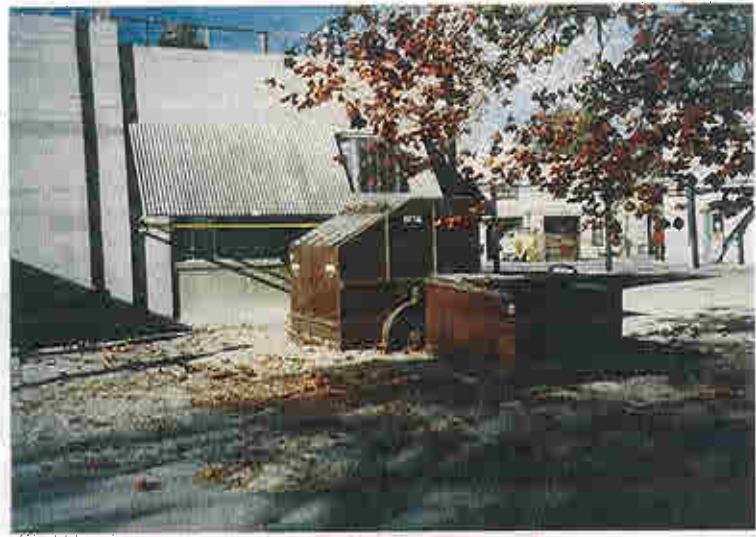
Method 8260A (APCI)
)Cs

| Sample ID | Location ID | Sample Date (feet) | Depth Lab | Naphthalene mg/kg | o-Xylene mg/kg | sec-Butylbenzene mg/kg | Styrene mg/kg | Tetrachloroethylene mg/kg | Toluene mg/kg | trans-1,3-Dichloropropene mg/kg | Trichloroethylene mg/kg | Vinyl chloride mg/kg |
|-----------------------|-------------|-----------------------|--------------|----------------------|-------------------|---------------------------|------------------|------------------------------|------------------|------------------------------------|----------------------------|-------------------------|
| I13-SB02-1-S | SB02 | 2/16/97 | 10.5 | APCL | <0.0002 | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0002 | <0.0004 | <0.0002 |
| I13-SB02-2-S | SB02 | 2/16/97 | 25.5 | APCL | <0.0002 | w | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0004 | <0.0002 |
| I13-SB02-3-S | SB02 | 2/16/97 | 34 | APCL | <0.0002 | w | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0002 | <0.0002 |
| I13-SB02-4-S | SB02 | 2/17/97 | 45.5 | APCL | <0.0002 | w | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0004 | <0.0002 |
| I13-SB02-5-S | SB02 | 2/17/97 | 49.5 | APCL | <0.0002 | w | <0.0001 | <0.0001 | <0.0002 | <0.0001 | <0.0005 | <0.0002 |
| Analyses | | | | | | | | | | | | |
| Detections | | | | | | | | | | | | |
| Minimum Concentration | | | | | | | | | | | | |
| Maximum Concentration | | | | | | | | | | | | |
| HWAD - PCG | | | | | | | | | | | | |
| HWAD - PCG Hits | | | | | | | | | | | | |
| Notes: | | | | | | | | | | | | |
| NE = Not established. | | | | | | | | | | | | |

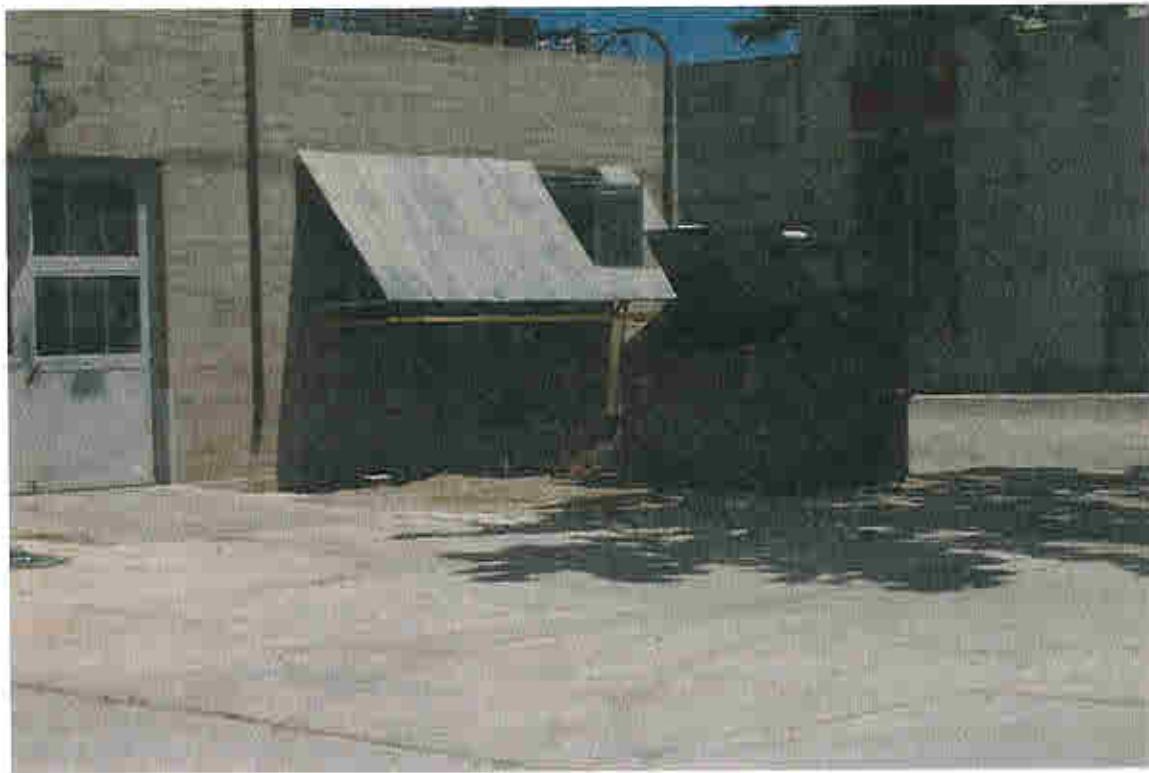
Appendix D



I-13, View to east of sump location, foreground, with dumpsters behind.
#R6-P7, 11/4/93



I-13, View to NE, with sump location to left of large dumpster, Building
10 in background. #R6-P8, 11/4/93



August 1999